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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,668	10/24/2003	Naveen Bali	5693P033	9966
48102 7590 01/12/2007 NETWORK APPLIANCE/BLAKELY 12400 WILSHIRE BLVD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			EXAMINER ALI, MOHAMMAD	
			ART UNIT 2166	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 01/12/2007	DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/692,668	Applicant(s) BALI ET AL.	
	Examiner Mohammad Ali	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 24-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Applicant's election without traverse of Group I (claims 1-8 and 24-31) in the reply filed on 10/16/06 is acknowledged.

### ***Drawings***

2. The informal drawings submitted on 10/24/2003, while acceptable for examination, fail to meet the requirements of 37 CFR 1.84 (l) & (p). Thusly, prior to an allowance formal drawings are required in compliance with 37 CFR 1.121(d). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 8, 24 & 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,055,604 (henceforth referred to by "Voigt et al.").

Claim 1 is anticipated by Voigt et al. as follows: **A method comprising:**  
**maintaining a log of a plurality requests in a storage server (), each of the**  
**requests corresponding to a storage operation to be performed by the storage**  
**server on a set of storage devices, the log including a separate log entry for each**  
**of the requests** (figure 7 [C2:L56-60] [C3:L40-42]); **and including a separate**  
**checksum in each of the log entries, each checksum for use by a checksum**  
**algorithm in determining data integrity of the corresponding log entry** (figure 7,  
element 135 [C8:L15-32]).

Claim 2 is anticipated by Voigt et al. as in claim 1, **wherein the requests**  
**originate from a set of client devices serviced by the storage server** ([C3:L40-42]  
[C4:L25-29]).

Claim 8 is anticipated by Voigt et al. as in claim 1, **further comprising:**  
**maintaining an entry count in the log to indicate the number of log entries in the**  
**log** (figure 7, element 120); **and using the checksum of one of the log entries to**  
**determine whether the entry count is corrupted** ([C9:L15-26] checking the entry's  
checksum for corruption of the record entails a check of all of the data of the record,  
which includes the sequence number).

Claims 24 & 30 are anticipated by Voigt et al. using the same rationale as applied  
to claims 1, 2 & 8.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-8, 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Voigt et al. and U.S. Patent No. 6,880,149 (henceforth referred to as "Cronce").

Claim 3 is taught by Voigt et al. as in claim 1. However, Voigt et al. does not explicitly indicate **selecting the checksum algorithm based on a desired balance between performance and checksum strength**. Yet, Cronce teaches **selecting the checksum algorithm based on a desired balance between performance and checksum strength** (Cronce: [C5:L33-36] [C6:L56-58]).

One of ordinary skill in the art at the time of invention would have been aware of the tradeoffs involved in using any single checksum algorithm (Cronce: [C5:L31-37]). Thus, knowing that the loading of a storage system will be highly variable, and only

predictable to a limited extent, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a dynamic selection schema, as in Cronicé, for choosing the currently most suitable checksum algorithm for use in the log of Voigt et al..

Claim 4 is taught by Voigt et al. as in claim 1. However, Voigt et al. does not explicitly indicate **automatically selecting the checksum algorithm based on a predetermined criterion**. Yet Cronicé teaches **automatically selecting the checksum algorithm based on a predetermined criterion** (Cronicé: [C6:L5-8] a preference setting is a form of a predetermined criteria). One of ordinary skill in the art at the time of invention would have been aware of the tradeoffs involved in using any single checksum algorithm (Cronicé: [C5:L31-37]). Thus, knowing that the loading of a storage system will be highly variable, and only predictable to a limited extent, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a dynamic selection schema, as in Cronicé, for choosing the currently most suitable checksum algorithm for use in the log of Voigt et al..

Claim 5 is taught by the combination of Voigt et al. and Cronicé as in claim 4, **further comprising including an algorithm variable in the log to select the checksum algorithm from a plurality of selectable checksum algorithms, wherein said automatically selecting the checksum algorithm comprises selecting the checksum algorithm dynamically by modifying the algorithm variable during operation of the storage server** (Cronicé: figure 4b, element 420 [C5:L23-25]).

Claim 6 is taught by Voigt et al. as in claim 1. However, Voigt et al. does not explicitly indicate **including an algorithm variable in the log to select the checksum algorithm from a plurality of selectable checksum algorithms; and automatically selecting the checksum algorithm dynamically by modifying the algorithm variable during operation of the storage server.** Yet Cronic teaches **including an algorithm variable in the log to select the checksum algorithm from a plurality of selectable checksum algorithms** (Cronic: figure 4b, element 420 [C5:L23-25]); and **automatically selecting the checksum algorithm dynamically by modifying the algorithm variable during operation of the storage server** (Cronic: [C5:L16-17] [C5:L43-45]).

One of ordinary skill in the art at the time of invention would have been aware of the tradeoffs involved in using any single checksum algorithm (Cronic: [C5:L31-37]). Thus, knowing that the loading of a storage system will be highly variable, and only predictable to a limited extent, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a dynamic selection schema, as in Cronic, for choosing the currently most suitable checksum algorithm for use in the log of Voigt et al..

Claim 7 is taught by Voigt et al. as in claim 1. However, Voigt et al. does not explicitly indicate **including a separate algorithm variable in each of the log entries, to specify a checksum algorithm to be used separately for each said log entry.** Yet Cronic teaches **including a separate algorithm variable in each of the log**

**entries, to specify a checksum algorithm to be used separately for each said log entry** (Cronce: [C5:L16-25]).

However Voigt et al. does not explicitly indicate **including an algorithm variable in the log to select the checksum algorithm from a plurality of selectable checksum algorithms**. Yet, Cronce teaches **including an algorithm variable in the log to select the checksum algorithm from a plurality of selectable checksum algorithms** (Cronce: figure 4b, element 420 [C5:L23-25]).

One of ordinary skill in the art at the time of invention would have been aware of the tradeoffs involved in using any single checksum algorithm (Cronce: [C5:L31-37]). Thus, knowing that the loading of a storage system will be highly variable, and only predictable to a limited extent, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a dynamic selection schema, as in Cronce, for choosing the currently most suitable checksum algorithm for use in the log of Voigt et al.

Claims 25-29 are taught by the combination of Voigt et al. and Cronce using the same rationale as applied to claims 3 and 4.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voigt et al..



Art Unit: 2166

5. Claim 31 is taught by Voigt et al. as in claim 24, **wherein the storage appliance is a network appliance** (Voigt et al.: [C1:L20-34]). It would have been notoriously obvious to one of ordinary skill in the art at the time of invention to have included network communications capabilities within the disk array data storage system of Voigt et al. since a data storage system that is not capable of communicating with the outside world would have an extremely limited functional capability, and as such one of ordinary skill in the art at the time of invention would have known to include network communication capabilities.

**Contact Information**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is 571-272-4105. The examiner can normally be reached on M-F 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Mohammad Ali  
Primary Examiner

MA  
January 3, 2007